

# **BLM KILLARNEY LAKE PUBLIC ACCESS (PWSNO 1280258) SOURCE WATER ASSESSMENT REPORT**

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**September 6, 2002**



## **State of Idaho Department of Environmental Quality**

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## SOURCE WATER ASSESSMENT FOR BLM KILLARNEY LAKE PUBLIC ACCESS

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like the Killarney Lake Public Access, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for BLM Killarney Lake Public Access* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics and potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for BLM Killarney Lake Public Access is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Well Construction.** The BLM Killarney Lake Public Access well provides drinking water for a boat launch and campground in rural Kootenai County, Idaho. The well was drilled into a shale formation on the north side of Killarney Lake in 1992. It is fitted with a hand pump. The seal around the rod extending from the pump handle to the pump mechanism in the well casing needed to be tightened or replaced when the system was inspected in October 1999.

A 6-inch steel casing extends from a foot above grade to a depth of 51 feet. The overbore was filled with cement grout to a depth of 50 feet, sealing off seepage from water bearing strata between 12 and 16 feet, and 40 to 45 feet below the surface. The well is lined with 4-inch PVC to 143 feet. A stainless steel well screen is set from 143 to 148 feet. The bottom 18 feet of the well are gravel packed. The static water level in the well is 8 feet below the surface. The well appears to be located just above the 100-year flood plain.

**Well Site Characteristics.** About two thirds of the recharge zone delineated for the BLM Killarney Lake Public Access well is submerged. Soils in the well recharge zone are generally poorly drained to moderately well drained, providing some protection against migration of contaminants toward the well. At the well site, loose and broken shale lies over the first water bearing stratum. 6 feet of firm shale overlie a soft shale layer that contains the middle water-producing layer. 95 feet of firm to hard shale confine the main production level in the well, a fractured layer between 140 and 149 feet below the surface.

**Potential Contaminant Inventory.** The waters of Killarney Lake and adjacent wetlands cover most of the well recharge zone. Though the well is only about 60 feet from the shore, extensive testing in the summer of 2001 determined that the well is not directly influenced by surface water.

The ridge north of the well is undeveloped forest. A county road and recreational facilities run parallel to the lakeshore. Illegal dumping and other misuse of the facility has some potential for introducing contaminants into the area around the well. No other potential contaminant sources are documented inside the recharge zone.

**Water Quality History.** Chlorinating the well has successfully treated sporadic episodes of total coliform bacteria contamination. BLM tests the well monthly throughout the year. Nitrate tests, required annually, have all been negative.

No volatile organic chemicals were detected when the well was tested in 1994. None of the inorganic chemicals detected during comprehensive baseline testing in 1993 and 1994 exceeded the Maximum Contaminant Level.

**Susceptibility to Contamination.** The BLM Killarney Lake Public Access well is at low risk relative to all classes of regulated contaminants. The susceptibility analysis worksheet for your well on page 6 this report shows how your well was scored. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

BLM Killarney Lake Public Access water system was in good condition and with the following exceptions was in compliance with Idaho Rules for Public Water Systems when it was inspected in October 1999:

- The seal around the rod extending from the pump handle to the pump mechanism in the well casing needed to be tightened or replaced.
- A drain serving the concrete pad surrounding the well was plugged. Both of these maintenance deficiencies increase the well's vulnerability to contamination.

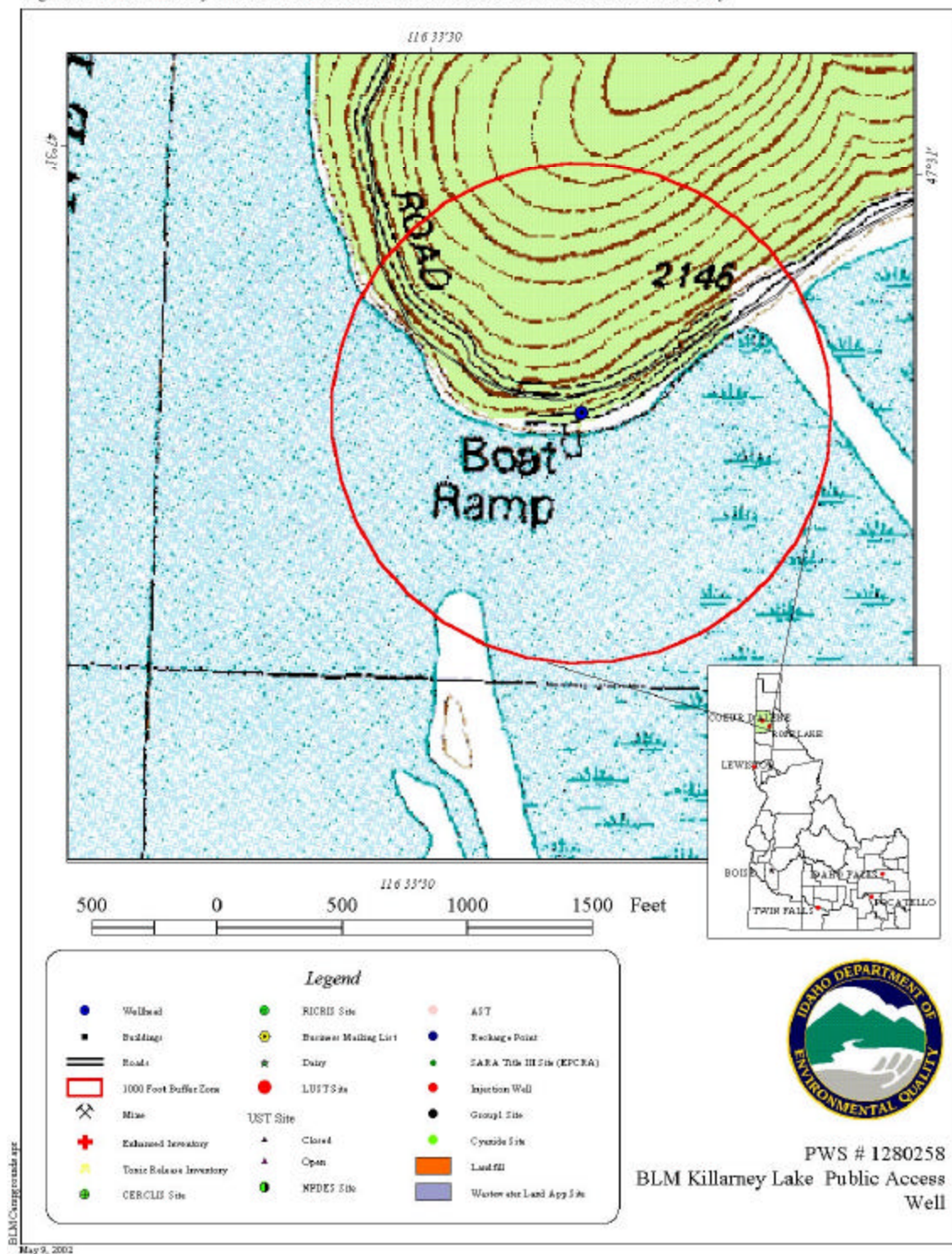
BLM already has a maintenance crew that routinely visits its recreation sites. It might be helpful to emphasize tasks that need to be done around the well during their training. Experienced personnel can inspect the well head and pump more thoroughly when water samples are collected so that needed repairs are spotted and attended to in a timely manner.

For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

**DEQ website: <http://www.deq.state.id.us>**

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Figure 1. BLM Killarney Lake Public Access Delineation and Potential Contaminant Inventory.



**Ground Water Susceptibility**

Public Water System Name :

BLM KILLARNEY LAKE PUBLIC ACCESS

Well # WELL 1

Public Water System Number :

1280258

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1. System Construction		SCORE			
Drill Date	11/22/92				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1999			
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	NO	1			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>1</b>			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>3</b>			
3. Potential Contaminant / Land Use - ZONE 1A		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	RECREATION AREA	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score - Zone 1A</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	1
(Score = # Sources X 2 ) 8 Points Maximum		2	2	2	2
Sources of Class II or III leacheable contaminants or Microbials	YES	1	1	1	
4 Points Maximum		1	1	1	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>
<b>4. Final Susceptibility Source Score</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
<b>5. Final Well Ranking</b>		Low	Low	Low	Low

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

**Final Susceptibility Ranking:**

0 - 5 Low Susceptibility  
 6 - 12 Moderate Susceptibility  
 > 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.